Track Counting status

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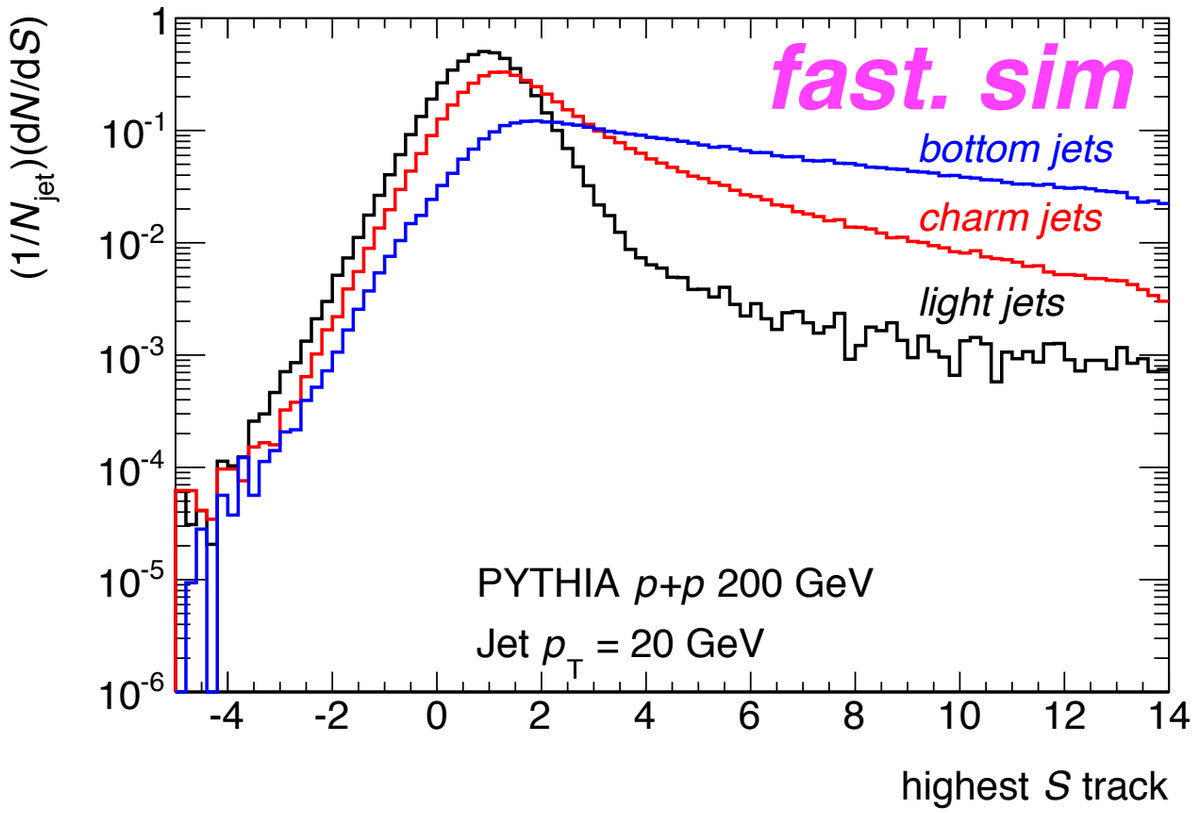
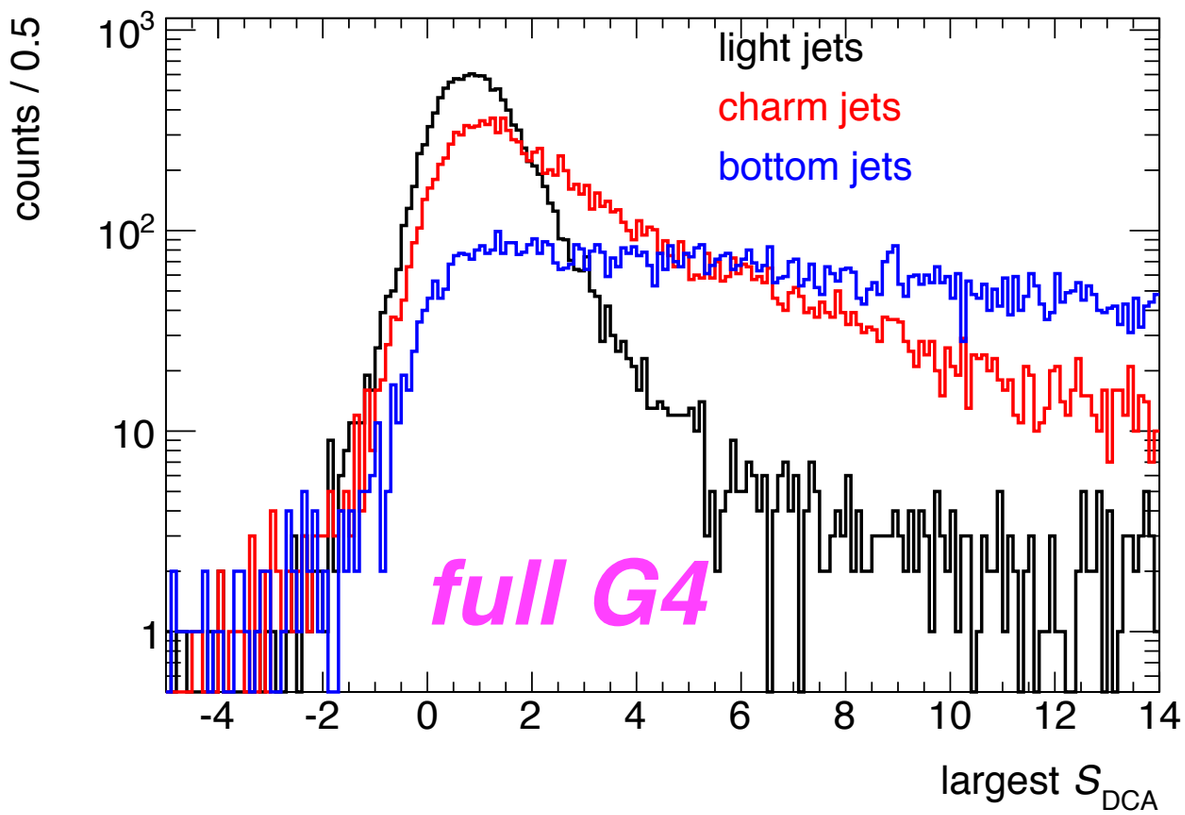
What's been done



~Nov. 2014 (Science Review)
fast simulation: parameterized DCA performance applied to truth-level charged hadrons



May 2016
G4 simulation: cutting on DCA of reconstructed tracks

Workflow & needs

- What I need to do in all cases:
  - ➡ new generator-level light/charm/bottom jet Pythia8 samples, with proper filtering and in HepMC format
- For fast simulation studies:
  - ➡ adapt old work from PHPythia-based to HepMC-based
    - ➡ need from experts (in principle, in bins of hadron p_T): efficiency, DCA resolutions, range of measurable DCA's
    - ➡ can "plug and play" different sets of performance parameterizations
- For G4 studies:
  - ➡ need from experts: "official" G4 macros
  - ➡ for *pp*, tracking simulations are tractable enough that I can run reasonably-sized "private" productions

Planning for ALD 31 May charge

- I have other commitments I need to balance between now and end of May
  - ➡ best for me if goals from co-conveners are as specific in scope as possible
    - ➡ i.e. fast parametrization, 1 VTX layer +1 MAPS layer, *pp*, Purity vs. Efficiency curves
- One thing that may be prohibitively challenging on this timescale: any statement of performance in Pb+Pb
  - ➡ for full G4 sim, track finding can get very expensive for some configurations
  - ➡ for fast parameterization, embedding studies are rather “ad hoc”